

A LOW-COST SATELLITE COMMUNICATION SYSTEM

ABSTRACT

5 A communication system is provided that allows the use of low-cost, low-power remote
terminal units that communicate substantially asynchronously and independently to a base
station. To minimize cost and complexity, the remote terminal units are configured similarly,
including the use of substantially identical transmission schemes, such as a common Direct
Sequence Spread Spectrum (DSSS) code. To minimize collisions among transmissions, the
communication system is designed to use a high-gain antenna with a limited field of view, to
10 limit the number of contemporaneous, or overlapping transmissions that are received at the base
station. To cover a wide area, the limited field of view is swept across the area of coverage. To
overcome potential losses caused by collisions, the remote terminal units are configured to repeat
transmissions; to minimize repeated collisions, the repeat interval and/or duration is randomized.